

USSN: 10/677,551

Ref. No. 27712 (formerly 01337.US1)

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled)

2. (Previously Presented) The method of claim 20, wherein each R^4 is independently

- (a) H,
- (b) halo,
- (e) SR^{12} ,
- (f) $S(O)_mR^{13}$,
- (g) NR^9R^{10} ,
- (h) $NR^9S(O)_mR^{13}$,
- (i) $NR^9C(=O)OR^{13}$,
- (j) phenyl optionally substituted by one or more R^8 ,
- (k) heteroaryl optionally substituted by one or more R^8 ,
- (l) cyano,
- (m) nitro,
- (n) $CONR^9R^{10}$,
- (o) CO_2R^{12} ,
- (p) $C(=O)R^{13}$,
- (q) $C(=NOR^{12})R^{13}$,
- (s) $NR^9C(=O)-R^{12}$,
- (t) C_{1-7} alkyl, C_{1-7} alkenyl or C_{1-7} alkynyl each of which is optionally substituted by one or more R^{11} , or
- (u) het¹ optionally substituted by one or more R^8 .

3. (Previously Presented) The method of claim 2, wherein each R^4 is independently selected from NO_2 , H, Br, F, CF_3 , CN, NH_2 , $-C(O)-OCH_3$, $-S-CH_3$, $-S(O)_2-CH_3$, $-N(OCH_3)-CH_3$, $-NH-C(O)-O-tbutyl$, $-NH-C(O)-CH_3$, heteroaryl optionally

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substituted by one or more R⁸, het¹ optionally substituted by one or more R⁸, -S(O)₂-CH₃, or phenyl optionally substituted by one or more of NO₂, Cl, F, -OCH₃, and -OCF₃.

4. (Previously Presented) The method of claim 20, wherein each R³ is H.

5. (Previously Presented) The method of claim 20, wherein R¹ is -C(O)R⁶.

6. (Previously Presented) The method of claim 20, wherein R² is -C(O)R⁷.

7. (Previously Presented) The method of claim 6, wherein R¹ is -C(O)R⁶

8. (Previously Presented) The method of claim 7, wherein R⁶ and R⁷ form -N(R¹⁷)-C(O)-N(R¹⁷)- or -N(R¹⁷)-C(S)-N(R¹⁷)-.

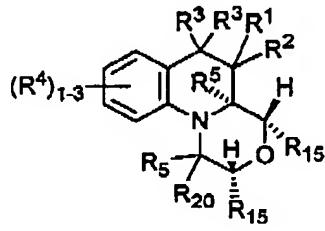
9. (Canceled)

10. (Canceled)

11. (Currently Amended) The method of claim 20, wherein each R¹⁵ is independently H, or C₁₋₇ alkyl optionally substituted by one or more R¹¹ substituents.

12. (Previously Presented) The method of claim 11, wherein X is -C(H)(C₁₋₄ alkyl)-O-C(H)(C₁₋₄ alkyl)-.

13. (Currently Amended) The method of claim 20, wherein the compound has the formula of



and each R₁₅ is independently (b), (c), (d), (e), (f),

or (g)

(b) OR¹¹

(c) Oxo,

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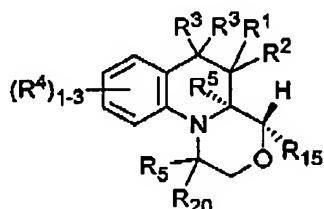
(d) C₁₋₇ alkyl which is optionally substituted by one or more R¹¹ substituents.

(e) C₃₋₈ cycloalkyl, C₃₋₈ cycloalkenyl or C₃₋₈ cycloalkynyl each of which is optionally substituted by one or more R¹¹ substituents.

(f) aryl optionally substituted by one or more R⁸, or

(g) heteroaryl optionally substituted by one or more R⁸.

14. (Currently Amended) The method of claim 20, wherein the compound has the formula of



and each R₁₅ is independently (b), (c), (d), (e), (f),

or (g)

(b) OR¹¹.

(c) Oxo.

(d) C₁₋₇ alkyl which is optionally substituted by one or more R¹¹ substituents.

(e) C₃₋₈ cycloalkyl, C₃₋₈ cycloalkenyl or C₃₋₈ cycloalkynyl each of which is optionally substituted by one or more R¹¹ substituents.

(f) aryl optionally substituted by one or more R⁸, or

(g) heteroaryl optionally substituted by one or more R⁸.

15. (Previously Presented) The method of claim 20, wherein R¹⁶ is (C=O)OR¹³ or C₁₋₇ alkyl.

16. (Previously Presented) The method of claim 20, wherein each R⁵ is independently H or C₁₋₇ alkyl.

17. (Previously Presented) The method of claim 20 wherein the compound comprises

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(2R,4S,4aS)-2,4-dimethyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2'H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

8-Bromo-1,2,4,4a-tetrahydro-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

8-Fluoro-1,2,4,4a-tetrahydro-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethyl-8-trifluoromethylspiro[[1,4]oxazino]4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

1,1',2, 3'4,4',4a, 6'-Octahydro-2,4',6'-trioxospiro[[1,4]oxazino[4,3-a] quinoline-5(6H), 5' (2' H)-pyrimidine]-8-carbonitrile;

1,2,4,4a-Tetrahydro-2,4-dimethyl-8-carboxamidespiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

1,2,4,4a-Tetrahydro-8-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

1,2,4,4a-Tetrahydro-1,4a-dimethyl-8-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

8-Bromo-1,2,4,4a-tetrahydro-cis-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-4'-thioxo-2',6' (1' H,3' H)-dione;

8-Bromo-1,2,4,4a-tetrahydro-cis-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' methyl, 3' methyl)-trione;

N-[1,1',2,3',4,4',4a,6'-Octahydro-2,4-dimethyl-2',4',6'-trioxospiro[[1,4]oxazino[4,3-a]quinolone-5(6H), 5' (2' H)-pyrimidin]-8-yl]acetamide;

tert-butyl 1,1',2, 3',4,4',4a,6'-Octahydro-2,4-dimethyl-2',4',6'-trioxospiro[[1,4]oxazino[4,3-a]quinolone-5(6H), 5' (2' H)-pyrimidin]-8-ylcarbamate;

8-Amino-1,2,4,4a-tetrahydro-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinolone-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione monohydrochloride;

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9-Bromo-1,2,4,4a-tetrahydro-2,4-dimethyl-8-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5'(2'H)-pyrimidine]-2',4',6'(1'H,3'H)-trione;

8-Acetyl-1,2,4,4a-tetrahydro-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5'(2'H)-pyrimidine]-2',4',6' (1'H,3'H)-trione;

8-Ethanone-O-methyloxime-1-1,2,4,4a-tetrahydro-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5'(2'H)-pyrimidine]-2',4',6' (1'H,3'H)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethyl-8-(methylsulfonyl)spiro[[1,4]oxazino [4,3-a]quinoline-5(6H), 5'(2'H)-pyrimidine]-2',4',6'(1'H,3'H)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethyl-8-(methylsulfinyl)spiro[[1,4]oxazino [4,3-a]quinoline-5(6H), 5'(2'H)-pyrimidine]-2',4',6'(1'H,3'H)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethyl-8-(methylthio)spiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5'(2'H)-pyrimidine]-2',4',6'(1'H,3'H)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethyl-9-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5'(2'H)-pyrimidine]-2',4',6'(1'H,3'H)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethyl-8-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5'(2'H)-pyrimidine]-2',4',6'(1'methyl,3'methyl)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethyl-8-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5'(2'H)-pyrimidine]-2',4',6'(1'H, 3'methyl)-trione;

1,2,4,4a-Tetrahydro-4-methyl-8-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5'(2'H)-pyrimidine]-2',4',6'(1'H,3'H)-trione;

1,2,4,4a-Tetrahydro-2-methyl-8-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5'(2'H)-pyrimidine]-2',4',6'(1'H,3's)-trione;

1,1',2'3'4'4'a-Hexahydro-2',4'-dimethyl-1,3-dioxospiro[2H-indene-2,5'(6'H)-[1,4]oxazino[4,3-a]quinoline]-8'-carbonitrile;

1,2,4,4a-Tetrahydro-2,4-dimethyl[1,4]oxazino[4,3-a]quinoline-5,5,8(6H)-tricarbonitrile;

8-Bromo-1,2,4,4a-tetrahydro-2,4-dimethyl[1,4]oxazino[4,3-a]quinoline-5,5(6H)-dicarbonitrile;

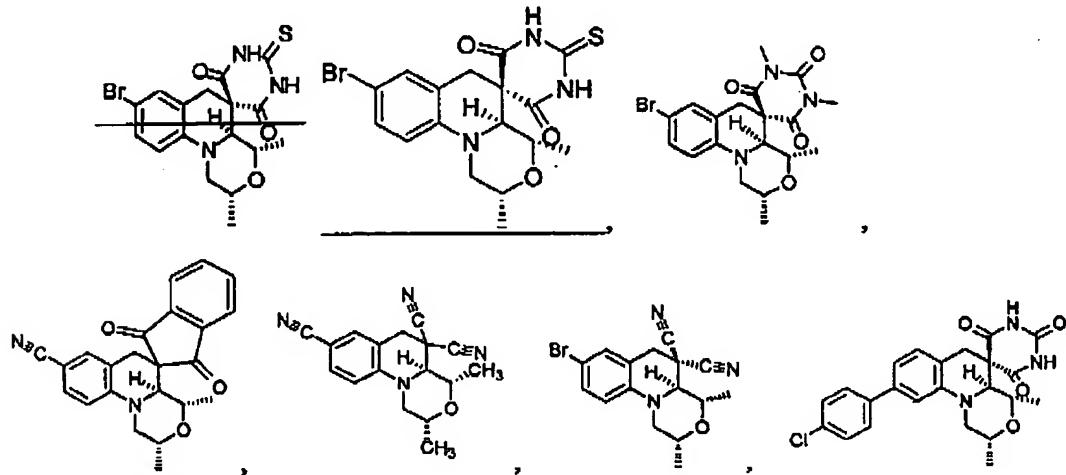
9-(4-Chlorophenyl)-1,2,4,4a-tetrahydro-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5'(2'H)-pyrimidine]-2',4',6'(1'H,3'H)-trione;

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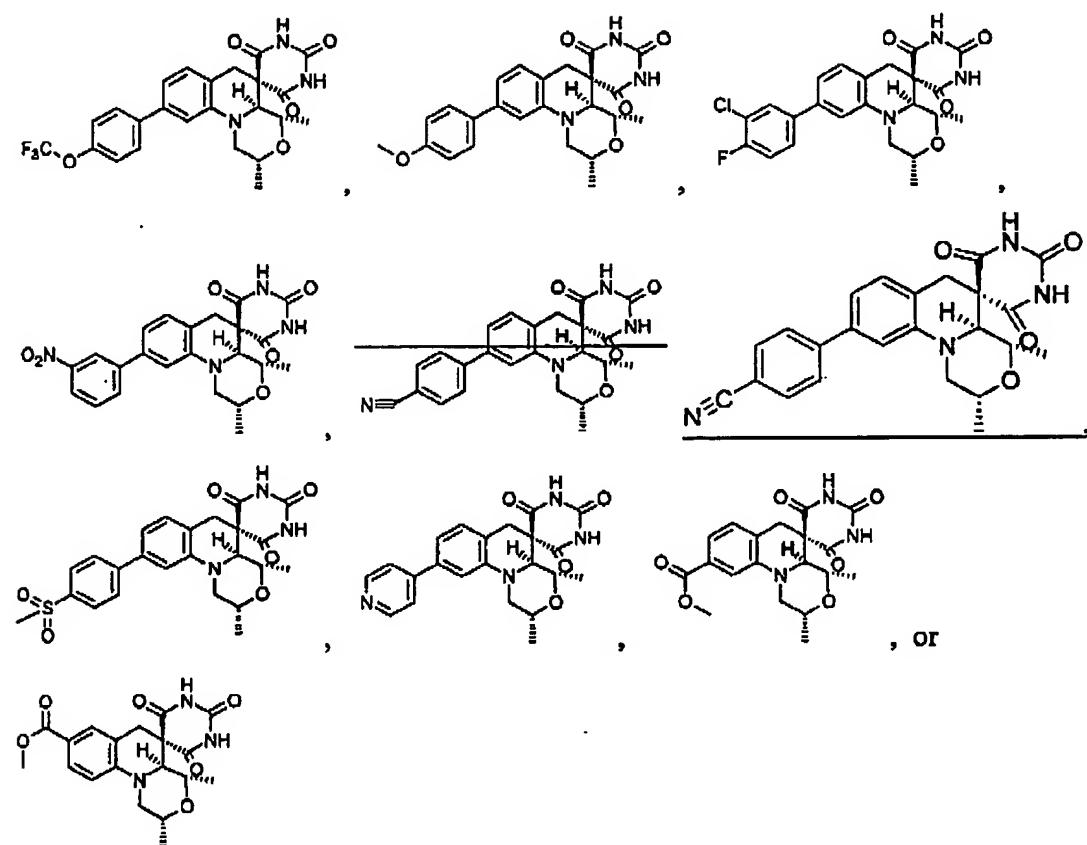
1,2,4,4a-Tetrahydro-2,4-dimethyl-9-[4-(trifluoromethoxy)phenyl]spiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;
 1,2,4,4a-Tetrahydro-9-(methoxyphenyl)-2,4-dimethylspiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;
 9-(3-Chloro-4-fluorophenyl)-1,2,4,4a-tetrahydro-2,4-dimethylspiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;
 1,2,4,4a-Tetrahydro-2,4-dimethyl-9-(3-nitrophenyl)spiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;
 1,1',2,3',4,4',4a,6'-Octahydro-2,4-dimethyl-2',4',6'-trioxospiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)pyrimidine]-9-yl]benzonitrile;
 1,2,4,4a-Tetrahydro-2,4-dimethyl-9-[4-(methylsulfonyl)phenyl]spiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;
 1,2,4,4a-Tetrahydro-2,4-dimethyl-9-(4-pyridinyl)spiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;
 Methyl-1,1',2,3',4,4a,6'-Octahydro-2,4-dimethyl-2',4',6'-trioxospiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)pyrimidine]-9-carboxylate; or
 Methyl-1,1',2,3',4,4a,6'-Octahydro-2,4-dimethyl-2',4',6'-trioxospiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)pyrimidine]-8-carboxylate.

18. (Previously Presented) The method of claim 20 wherein the compound comprises



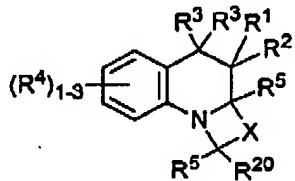
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19. (Canceled)

20. (Currently Amended) A method for the treatment of bacterial infections in mammals comprising administration of an effective amount of a compound of formula I, including enantiomeric, diastereomeric, or tautomeric isomers thereof, or any pharmaceutically acceptable salt thereof to said mammal;



I

wherein,

 R^1 is

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- (a) R^{12}
- (b) $C(=O)R^6$, or
- (c) $CN;$

 R^2 is

- (a) R^{12}
- (b) $C(=O)R^7$,
- (c) CN ,
- (d) $-CH_2-R^7$,
- (e) $-NR^{17}R^7$,
- (f) $-CH_2COR^7$, or
- (g) $-CH_2CH_2COR^7$;

Each R^3 is independently

- (a) H ,
- (b) R^{12} ,
- (c) C_{1-7} alkyl, C_{1-7} alkenyl or C_{1-7} alkynyl each of which is optionally substituted by one or more R^{11} ,
- (d) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more R^{11} ,
- (e) aryl optionally substituted by one or more R^8 ,
- (f) heteroaryl optionally substituted by one or more R^8 ,
- (g) halo, or
- (h) both R_3 taken together are oxo;

Each R^4 is independently

- (a) H ,
- (b) halo,
- (c) OR^{12} ,
- (d) $OC(=O)NR^9R^{10}$,
- (e) SR^{12} ,
- (f) $S(O)_mR^{13}$,
- (g) NR^9R^{10} ,
- (h) $NR^9S(O)_mR^{13}$,

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- (i) $NR^9C(=O)OR^{13}$,
- (j) phenyl optionally substituted by one or more R^8 ,
- (k) heteroaryl optionally substituted by one or more R^8 ,
- (l) cyano,
- (m) nitro,
- (n) $CONR^9R^{10}$,
- (o) CO_2R^{12} ,
- (p) $C(=O)R^{13}$,
- (q) $C(=NOR^{12})R^{13}$,
- (r) $S(O)_mNR^9R^{10}$,
- (s) $NR^9C(=O)-R^{12}$,
- (t) C_{1-7} alkyl, C_{1-7} alkenyl or C_{1-7} alkynyl each of which is optionally substituted by one or more R^{11} ,

(u) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more R^{11} ,

- (v) N_3 ,
- (w) het¹ optionally substituted by one or more R^8 , or
- (x) $C(O)O-C_{1-4}$ alkyl- R^{12} ;

Each R^5 is independently,

- (a) H,
- (b) C_{1-7} alkyl, C_{1-7} alkenyl or C_{1-7} alkynyl each of which is optionally substituted by one or more R^{11} ,
- (c) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more R^{11} ,

- (d) aryl optionally substituted by one or more R^8 , or
- (e) heteroaryl optionally substituted by one or more R^8 ;

R^6 and R^7 are independently;

- (a) OR^{12} ,
- (b) NR^9R^{10} ,
- (c) R^{13} , or

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(e) R^6 and R^7 together with the 2 carbons to which they are attached form cyclohexane-1,3-dione optionally substituted by one or more R^{13} , cyclopentane-1,3-dione optionally substituted by one or more R^{13} , R^6 and R^7 together form $-N(R^{17})-S(O)_m-N(R^{17})-$, $-N(R^{17})-C(O)-N(R^{17})-$, $-N(R^{17})-C(S)-N(R^{17})-$, $-N(R^{17})-N(R^{17})-$, $-N(R^{17})-C(O)-$, or $-N(R^{17})-$, or R^6 and R^7 together form a phenyl ring;

 R^8 is

- (a) H,
- (b) halo,
- (c) OR^{12} ,
- (d) OCF_3 ,
- (e) SR^{12} ,
- (f) $S(O)_mR^{13}$,
- (g) NR^9R^{10} ,
- (h) $NR^9S(O)_mR^{13}$,
- (i) $NR^9C(=O)OR^{13}$,
- (j) phenyl optionally substituted by halo, cyano, C_{1-7} alkyl, or C_{1-7} alkoxy, in the alkyl portion of the C_{1-7} alkyl and C_{1-7} alkoxy is optionally substituted by one or more R^{11} ;
- (k) heteroaryl optionally substituted by halo, C_{1-7} alkyl, or C_{1-7} alkoxy,
- (l) cyano,
- (m) nitro,
- (n) $CONR^9R^{10}$,
- (o) CO_2R^{12} ,
- (p) $C(=O)R^{13}$,
- (q) $C(=NOR^{12})R^{13}$,
- (r) $S(O)_mNR^9R^{10}$,
- (s) $NR^9C(=O)-R^{12}$,
- (t) C_{1-7} alkyl, C_{1-7} alkenyl or C_{1-7} alkynyl each of which is optionally substituted by one or more R^{11} ,
- (u) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more R^{11} ,

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(v) -C(O)H, or

(w) -het¹;R⁹ and R¹⁰ are independently

(a) H,

(b) OR¹²,(c) aryl optionally substituted by one or more R¹⁴,(d) heteroaryl optionally substituted by one or more R¹⁴,(e) C₁₋₇alkyl which is optionally substituted by one or more R¹¹,(f) C₃₋₈cycloalkyl which is optionally substituted by one or more R¹¹,(g) (C=O)R¹³, or(h) R⁹ and R¹⁰ together with the nitrogen to which they are attachedform morpholine, pyrrolidine, piperidine, thiazine, piperazine, each of the morpholine, pyrrolidine, piperidine, thiazine, piperazine being optionally substituted with R¹¹;R¹¹ is

(a) oxo,

(b) phenyl optionally substituted by one or more R¹⁴,(c) OR¹²,(d) SR¹²,(e) NR¹²R¹²,

(f) halo,

(g) CO₂R¹²,(h) CONR¹²R¹²,(i) C₁₋₇alkyl, C₁₋₇ alkenyl or C₁₋₇ alkynyl each of which is optionally substituted by one or more oxo, halo, OR¹², SR¹², C₁₋₇alkyl, or NR¹²R¹² substituents, or(j) C₃₋₈ cycloalkyl, C₃₋₈ cycloalkenyl or C₃₋₈ cycloalkynyl each of which is optionally substituted by one or more oxo, halo, OR¹², SR¹², C₁₋₇alkyl, or NR¹²R¹² substituents;R¹² is

(a) H,

(b) C₁₋₇alkyl, C₁₋₇ alkenyl or C₁₋₇ alkynyl each of which is optionally substituted by oxo, halo, C₁₋₇alkyl, or C₁₋₇alkoxy substituents,

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(c) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more oxo, halo, C_{1-7} alkyl, or C_{1-7} alkoxy substituents,

(d) aryl optionally substituted by one or more halo, C_{1-7} alkyl, or C_{1-7} alkoxy substituents, or

(e) heteroaryl optionally substituted by one or more halo, C_{1-7} alkyl, or C_{1-7} alkoxy substituents;

R^{13} is

(a) C_{1-7} alkyl which is optionally substituted by one or more by oxo, halo, carboxyl, C_{1-7} alkyl, or C_{1-7} alkoxy substituents,

(b) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more by oxo, halo, C_{1-7} alkyl, or C_{1-7} alkoxy substituents,

(c) aryl optionally substituted by one or more halo, C_{1-7} alkyl, or C_{1-7} alkoxy substituents;

(d) heteroaryl optionally substituted by one or more halo, C_{1-7} alkyl, or C_{1-7} alkoxy substituents, or

(e) $-C(O)OH$

R^{14} is

(a) H,

(b) halo,

(c) C_{1-7} alkyl,

(d) OR^{12} ,

(e) OCF_3 ,

(f) SR^{12} ,

(g) $S(O)_mR^{13}$,

(h) $NR^{12}R^{12}$,

(i) $NR^{12}S(O)_mR^{13}$,

(j) $NR^{12}C(=O)OR^{13}$,

(k) phenyl optionally substituted by halo, C_{1-7} alkyl, or C_{1-7} alkoxy,

(l) heteroaryl optionally substituted by halo, C_{1-7} alkyl, or C_{1-7} alkoxy,

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- (m) cyano,
- (n) nitro,
- (o) $\text{CONR}^{12}\text{R}^{12}$,
- (p) CO_2R^{12} ,
- (q) $\text{C}(=\text{O})\text{R}^{13}$,
- (r) $\text{C}(=\text{NOR}^{12})\text{R}^{13}$,
- (s) $\text{S}(\text{O})_m\text{NR}^{12}\text{R}^{12}$,
- (t) $\text{NR}^9\text{C}(=\text{O})\text{-R}^{12}$,

(u) C_{1-7} alkyl, C_{1-7} alkenyl or C_{1-7} alkynyl each of which is optionally substituted by oxo, halo, OR^{12} , SR^{12} , C_{1-7} alkyl, or $\text{NR}^{12}\text{R}^{12}$ substituents, or

(v) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by oxo, halo, OR^{12} , SR^{12} , C_{1-7} alkyl, or $\text{NR}^{12}\text{R}^{12}$ substituents;

X is $-\text{C}(\text{R}^{15})_2\text{-O-C}(\text{R}^{15})_2-$;

Each R^{15} is independently

- (a) H,
- (b) OR^{11} ,
- (c) Oxo,
- (d) C_{1-7} alkyl which is optionally substituted by one or more R^{11} substituents,

(e) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more R^{11} substituents,

- (f) aryl optionally substituted by one or more R^8 , or
- (g) heteroaryl optionally substituted by one or more R^8 ;

R^{16} is

- (a) H
- (b) OR^{12} ,
- (c) $(\text{C}=\text{O})\text{R}^{13}$,
- (d) $(\text{C}=\text{O})\text{OR}^{13}$,
- (e) $(\text{C}=\text{O})\text{NR}^9\text{R}^{10}$,
- (f) $\text{S}(\text{O})_m\text{R}^{13}$,

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(g) $S(O)_mNR^9R^{10}$,(h) C_{1-7} alkyl which is optionally substituted by one or more R^{11} substituents,(i) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more R^{11} substituents,(j) aryl optionally substituted by one or more R^8 , or(k) heteroaryl optionally substituted by one or more R^8 ; R^{17} is

(a) H,

(b) -OH, or

(c) C_{1-4} alkyl; R^{19} is

(a) H,

(b) OR^{11} ,

(c) Oxo,

(d) C_{1-7} alkyl which is optionally substituted by one or more R^{11} substituents,(e) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more R^{11} substituents,(f) aryl optionally substituted by one or more R^8 , or(g) heteroaryl optionally substituted by one or more R^8 ; R^{20} is

(a) H,

(b) C_{1-7} alkyl, C_{1-7} alkenyl or C_{1-7} alkynyl each of which is optionally substituted by one or more R^{11} ,(c) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more R^{11} ,(d) aryl optionally substituted by one or more R^8 ,(e) heteroaryl optionally substituted by one or more R^8 , or(f) R^{20} and R^{19} , taken together, form - CH_2 ;

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wherein, "aryl" denotes a phenyl radical or an ortho-fused bicyclic carbocyclic radical having about nine to ten ring atoms in which at least one ring is aromatic;

wherein, "heteroaryl" encompasses a radical attached via a ring carbon or ring nitrogen of a monocyclic aromatic ring containing five or six ring atoms consisting of carbon and 1, 2, 3, or 4 heteroatoms, selected from oxygen (-O-), sulfur (-S-), ~~oxygenated sulfur such as sulfinyl (S=O) and sulfonyl (S(=O)2~~, or nitrogen N(Z) wherein Z is absent or is H, O, C₁₋₄alkyl, phenyl or benzyl, or a radical of an ortho-fused bicyclic heterocycle of about eight to ten ring atoms derived therefrom;

het¹ is a C- or N- linked five- (5), six- (6), seven- (7), or eight- (8) membered mono- or bicyclic ring, each mono- or bicyclic ring being fully saturated or partially unsaturated, and having 1-4 heteroatoms selected from the group consisting of oxygen, sulfur, and nitrogen; het¹ being optionally substituted by 1-2 substituents selected from C₁-C₄alkyl, amino, C₁-C₄alkylamino, C₁-C₄alkyloxy, halogen -CN, =O, and =S;

each m is independently 0, 1, or 2; and

each n is independently 1, 2, or 3.

21. (Previously Presented) The method of claim 20 wherein said compound is administered to the mammal orally, parenterally, transdermally, or topically in a pharmaceutical composition.

22. (Original) The method of claim 20 wherein said compound is administered in an amount of from about 0.1 to about 100 mg/kg of body weight/day.

23. (Original) The method of claim 20 wherein said compound is administered in an amount of from about 1 to about 50 mg/kg of body weight/day.

24. (Canceled)

25. (Canceled)

26. (Previously Presented) The method of claim 20 wherein the composition comprises an enantiomerically enriched form of a compound of formula I.

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27. (Previously Presented) The method of claim 26, wherein the composition comprises at least 50% of one enantiomer of a compound of formula I relative to the other enantiomer of the compound.

28. (Previously Presented) The method of claim 27, wherein the composition comprises at least 80% of one enantiomer of a compound of formula I relative to the other enantiomer of the compound.

29. (Previously Presented) The method of claim 27, wherein the composition comprises at least 90% of one enantiomer of a compound of formula I relative to the other enantiomer of the compound.

30. (Previously Presented) The method of claim 20 wherein the compound comprises

(2S,4R,4aR)-4-isopropyl-2-methyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2R,4S,4aS)-2,4-diethyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2R,4S,4aS)-2,4-dimethyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2R,4S,4aS)-8-acetyl-9,10-difluoro-2,4-dimethyl-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2R,4S,4aS)-10-fluoro-2,4-dimethyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2R,4S,4aS)-2,4-dimethyl-8-[5-(trifluoromethyl)-1,2,4-oxadiazol-3-yl]-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethyl-8-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6H),5'(2'H)-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2S,4R,4aR)-2-isopropyl-4-methyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

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(2S,4R,4aR)-2-isopropyl-4-methyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2R,4S,4aS)-2,4-diisopropyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2R,4S,4aS)-2,4-dimethyl-8-(3-methyl-1,2,4-oxadiazol-5-yl)-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2S,4R,4aR)-8-acetyl-10-fluoro-2,4-dimethyl-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

8-bromo-2,4-dimethyl-10-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2R,4S,4aS)-2,4-dimethyl-8-(5-methyl-1,2,4-oxadiazol-3-yl)-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2S,4S,4aS)-4-methyl-8-nitro-2-(trifluoromethyl)-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

4-azido-3-iodobenzyl (2R,4S,4aS)-2,4-dimethyl-2',4',6'-trioxo-1,1',2,3',4,4',4a,6'-octahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-8-carboxylate; or

(2S,4S,4aS)-2,4-dimethyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione.

31. (Previously Presented) The method of claim 20 wherein:

when each R₄ is H, that R₁ and R₂ are not simultaneously H, CN, or -C(O)-OCH₃ or that R₁ is not CN and R₂ is not -C(O)-OC₁₋₄alkyl;

when the compound is 1,2,4,4a-Tetrahydro-cis-2,4-dimethyl-8-nitrospiro[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione that the compound is enantiomerically enriched (-) form of (2R,4S,4aS)-2,4-dimethyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione.

32. (Previously Presented) The method of claim 20 wherein the compound of formula I is administered as a pharmaceutical composition, wherein the pharmaceutical composition additionally comprises a pharmaceutically acceptable carrier.

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33. (Previously Presented) The method of claim 4 wherein:

R¹ is -C(O)R⁶;

R² is -C(O)R⁷;

each R⁴ is independently selected from H, F and heteroaryl optionally substituted by one or more R⁸;

each R⁵ is H;

R⁶ and R⁷ form -N(R¹⁷)-C(O)-N(R¹⁷)-;

each R¹⁷ is H;

R²⁰ is H; and

X is -C(H)(C₁₋₄ alkyl)-O-C(H)(C₁₋₄ alkyl)-.

34. (Previously Presented) The method of claim 33 wherein R⁸ is C₁₋₇ alkyl.

35. (Previously Presented) The method of claim 13 wherein:

R¹ is -C(O)R⁶;

R² is -C(O)R⁷;

each R³ is H;

each R⁴ is independently selected from H, F and heteroaryl optionally substituted by one or more R⁸;

each R⁵ is H;

R⁶ and R⁷ form -N(R¹⁷)-C(O)-N(R¹⁷)-;

each R¹⁵ is C₁₋₇ alkyl;

each R¹⁷ is H; and

R²⁰ is H.

36. (Previously Presented) The method of claim 35 wherein R⁸ is C₁₋₇ alkyl.